

CLAIMS

- [1] A method for pivotably driving a carriage, comprising the steps of:
engaging a carriage positioned on the ground side at a curved portion of an
oval-shaped endless moving path consisting of a pair of inner and outer endless
5 rails with a carrier driven along the curved portion when the carriage is driven
under a guide of the rails; and
towing the carriage over the entire length of the curved portion by the
carrier.
- [2] A method for pivotably driving a carriage according to claim 1, wherein the
10 carrier is reciprocally moved along the same path by the action of traveling of a
roller chain.
- [3] A method for pivotably driving a carriage according to claim 1 or 2,
wherein the carriage is positioned at the ground side by fitting a positioning pin
displaced forwardly and backwardly from the ground side onto the carriage while
15 the carriage is engaged with the carrier by fitting an engagement pin displaced
forwardly and backwardly from the carriage side onto the carrier.
- [4] A method for pivotably driving a carriage according to any one of claims 1-
3, wherein the carriage is engaged with the carrier in a state where the carriage is
positioned and locked on the ground side, then the carriage is unlocked and
20 towed over the entire length of the curved portion by the carrier, and
subsequently the carriage is again positioned and locked on the ground side as
well as is disengaged from the carrier.
- [5] A method for pivotably driving a carriage according to any one of claims 1-
4, wherein the carrier which is moved outward while towing the carriage is
25 returned to the original position.
- [6] A method for pivotably driving a carriage according to any one of claims 1-
5, wherein compressed air is supplied to an engagement pin-actuating cylinder of
the carriage before the engagement/disengagement of the carriage with the carrier.
- [7] A device for implementing a method for pivotably driving a carriage
30 according to any one of claims 1-6, wherein an endless roller chain which is
traveled along the curved portion over its entire length in the horizontal plane is
disposed with the roller axis being aligned with the vertical line, and one or more
carrier which can engage with/disengage from the carriage is mounted on the

roller chain.

[8] A device for pivotably driving a carriage according to claim 7, wherein a weight-supporting roll is mounted on the roller chain at every given pitch of its chain link.

5 [9] A device for pivotably driving a carriage according to claim 7 or 8, wherein a wear resistance resin material for contacting with the roller is arranged on a chain guide at the position which locates at least inside of the curvature of the roller chain extending along the curved portion and contacts with the chain.

10 [10] A device for pivotably driving a carriage according to any one of claims 7-9, wherein the roller chain extends between the pair of inner and outer rails and a driving train for the roller chain is arranged between these rails.

[11] A device for pivotably driving a carriage according to any one of claims 7-10, wherein positioning pins which is displaced forwardly and backwardly from the ground side to engage with and disengage from the carriage as well as means
15 for supplying compressed air which is connected to and disconnected from an engagement pin-actuating cylinder of the carriage are arranged on each of the positions backside of the entrance and front of the exit of the curved portion with respect to the traveling direction of the carriage.

[12] A tire building system using a device for pivotably driving a carriage
20 according to any one of claims 7-11, comprising carriages on which a tire building drum is positioned and placed, a concurrent driving means which simultaneously and intermittently transmits each of a plurality of carriages aligned on a straight portion of an oval-shaped endless moving path over a given distance, and workstations which perform given works on the tire building drum
25 and are arranged at the positions respectively corresponding to the stopping positions of the carriages.